SIB-IMRT with concomitant chemotherapy-cetuximab after induction chemotherapy for locally-advanced-head-and-neck squamous cell carcinomas

M. Rodriguez-ruiz[1], J. López-picazo[2], A. Olarte[1], L. Arbea[1], J. Alcalde[3], M. Cambeiro[1], M. Idoate[4], T. Labiano-miravalles[5], J. Aristu[1], L. Ramos[6], M. Garcia-velloso[7], R. Martinez-monge[1], M. Moreno-jimenez[1]
[1] *Clinica Universitaria de Navarra, Radiation Oncology*
[2] *Clinica Universitaria de Navarra, Medical Oncology*
[3] *Clinica Universitaria de Navarra, Otorhinolaryngology*
[4] *Clinica Universitaria de Navarra, Anatomical Pathology*
[5] *Hospital de Navarra, Anatomical Pathology*
[6] *Clinica Universitaria de Navarra, Medical Physics*
[7] *Clinica Universitaria de Navarra, Nuclear Medicine*

Purpose. To determine tolerability and efficacy of induction chemotherapy (I-CHT) followed by simultaneous integrated boost intensity-modulated radiotherapy (SIB-IMRT) with concurrent chemotherapy/cetuximab (C-CHT) for locally-advanced squamous-head-and-neck carcinoma (LA-SHNC).
Methods and materials. Nineteen patients (13M/6F) with LA-SHNC (stage III:3–IV:16) were enrolled in a prospective study between March'07 and September'10, including 6 oral cavity/5 oropharynx/5 hypopharynx/2 larynx/1 paranasal sinuses. Four P16-HPV were identified. Two-cycles of Docetaxel/CDDP/Capecitabine, followed by SIB-IMRT and weekly CDDP/Cetuximab were prescribed. Staging studies included PET-CT with thermoplastic mask, used for to delimited target volumes. Weekly Cone-beam-IGRT was used. The prescribed SIB-IMRT doses to GTV, CTV and PTV were 73.6 Gy (2.24 Gy/f), 56.2 Gy (1.7 Gy/f) and 51.2 Gy (1.6 Gy/f), respectively, in 30 daily fractions. Survival, patterns of failure and acute/late toxicity were analyzed. Local recurrences were identified on MRI and/or PET/CT, and contoured (V-recur) on the original planning-CT. Local failure was classified according to the location of V-recur respect the 95% isodose line GTV prescription (IDL) as "in-field", "marginal" and "outside" when >95%, 20–95% or <20% of V-recur was within the 95% IDL, respectively. Data from DVH of target and organs-at-risk volume were analyzed.
Results. Eighteen patients received 2-cycles of I-CHT. All patients received the prescribed SIB-IMRT dose, median of C-CHT 6-cycles. After complete treatments, objective response was 95% (79%complete/16%partial). Highest toxicity during I-CHT was grade3–4 (31%). During SIB-IMRT, most frequent grade >3 toxicity was mucositis/dysphagia (32%). No treatment-related dead was observed. Two osteonecrosis were observed. None other late toxicity grade >2 was observed. After 37 months (18–56) median follow-up, 6 patients (31%) relapsed: 1 distant and 5 local (4 "in fied"/1 "marginal"). Three-year D-DFS, L-DFS, DFS, and OS were 94%, 69%, 54%, and 66%, respectively. Univariate study determinate worse OS in undifferentiated SHNC type ($p = 0.028$), and no complete response after treatments ($p = 0.001$). Tumor location was predictor of local control: better in oropharyngeal and laryngeal ($p = 0.001$). Multivariate analysis showed cervical esophagus V50 > 7% ($p = 0.001$) as predictor of acute mucositis/dysphagia ≥grade3 ($p = 0.005$).
Conclusion. SIB-IMRT with C-CHT after I-CHT is feasible and well tolerated schedule that shortens the overall treatment time in radical treatment of LA-HNSC, achieving encouraging local and distant control rates. A larger population of patients is needed.

http://dx.doi.org/10.1016/j.rpor.2013.03.286

Skull base chondrosarcoma. Case report

C. Gil, A. Rodríguez, M. Blanco, L. Pérez-Romasanta
Hospital Universitario de Salamanca, H. Clínico, Oncología Radioterápica

Introduction. Skull base (SB) chondrosarcoma (CSA) is approximately 6% of skull base lesions. The therapeutic approach is controversial. Multidisciplinary treatment using protontherapy after maximal surgery enables a local control(90–100%) at 5 years.
Objetive. A case of CSA that the treatment is with high technology.
Case report. A case of CSA in a 35-year-old woman with 8 weeks of pregnancy presenting symtoms of sudden onset diplopia. Magnetic resonance imaging (MRI) showed lytic lesion centered in the right foramen, with involvement of the boulder and inferior walls of internal auditory canal, clivus, carotid canal, hole torn posterior cavernous sinus and extension infracraneal, suggestive a right petroclival chondroma. Due to her pregnancy was decided to wait and induce labor at 37 weeks. Subsequently the patient presented diplopia and right otalgia, likewise dysphagia and hypoesthesia in the left arm. Ten months after diagnosis, the patient was underwent to a subtotal resection. Histologically, the tumor was a well-differentiated chondrosarcoma. The tumor cells were immunoreactive for S100(+++) vimentin(+++), AE1/AE3:(−) CAM 5.2:(−) EMA(−).The CT scan post-surgery showed tumor persistence although the extension study was negative. The neuro-oncology group decided adyuvant proton radiotherapy.The patient was translated to the Institut Curie Orsay, local radiation with tomotherapy was given 34.2 Gy, boost with protontherapy 36 Gy, TD:70.2 Gy/1.8 Gy.
Results. The MRI revealed no changed in residual tumor. The patient has a complete recovery of right VI cranial nerve palsy, partially of the VII left pair and tinnitus. Regular follow-up the last 7 months.

Discussion. Radiotherapy has demonstrated to be a valuable modality for local control in the postoperative setting or in advanced/inoperable cases treated with definitive intent. The use of proton therapy thanks to their higher conformity permits a dose escalation, following resection shows a very high probability of cure with a relatively low risk of complications.

http://dx.doi.org/10.1016/j.rpor.2013.03.287

Spindle cell head and neck tumour. A case report

V. González, M. Rodriguez, V. Morillo, R. Muelas, A. Conde, C. Ferrer
Consorcio Hospitalario de Castellon, Oncologia Radioterapica

Introduction. (1) The spindle cell carcinoma is a rare tumor with high capacity for lymphatic (24/50%) and distance metastasis, high local recurrence rate and high mortality (24–90%). (2) Locations: upper aerodigestive tract, larynx/oral cavity. (3) Epidemiology: ♀/♂ undefined; 50–70 years. (4) Prognostic factors: location, differentiation, invasion depth, keratin+, positive nodes, size. (5) Treatment: surgery ± adjuvant RT (undefined role).
Objective. To report a case of a young patient with a rare and aggressive tumor.
Materials and methods. Case report. ♂ 23 years. No relevant medical history. April-07: ulcer on the lower lip. Biopsy: tumor ulcerated, vimentin/keratin positive, consistent with spindle cell carcinoma. Extension study including cervical MRI without findings of interest. Treatment (5/11/07): local tumoral and adjacent jaw excision surgery without neck dissection. AP: spindle cell carcinoma G3 ulcerated on lower lip mucosa, Ø 1.5 cm, depth infiltration 0.5 cm; free margins and bone; immunohistochemistry: vimentin+, S100/HMB45, AI1/AI3/CD68/CD21/CD34+; pT1 N0 M0 R0. Adjuvant RT was decided since high grade G3 tumor, no nodal surgery and poor prognosis location. Adjuvant RT: isocentric 3D shaped with multileaf fields with 6 MV photons, conventional fractionation, 60 Gy on lower lip and bilateral cervical levels (date: 03/07/07 to 21/08/07). Immobilization: rigid headrest, radiolucid mouth opener, thermoplastic mask. Acute side effects: dermatitis I, mucositis II.
Results. Periodic follow-up with physical examination, blood test, chest radiography and facio-cervical MRI. 24 months after autodetected left submandibular node. Ultrasound: fatty center node. FNA negative for malignant cells. Follow-up time: 66 months. Chronic side effects by radiotheray: grade 0. Surgical chronic side effects: slight facial aesthetic alteration. Currently no detectable disease.
Conclusions. (1) Although the role of RT is not defined, it could be added with very few side effects. (2) In our case, a good evolution exits after prolonged follow-up.

http://dx.doi.org/10.1016/j.rpor.2013.03.288

Tension pneumocephalus related to nasopharyngeal carcinoma: A case report

E. Jiménez[1], S. Sabater[2], A. Martos[2], M. Carrizo[2], V. Honrubia[2], J. Fernández[2], M. Sevillano[3], I. Andrés[3], M. Aguayo[3], M. Villas[2]
[1] *Hospital General Universitario de Elche*
[2] *Complejo Hospital General de Albacete*
[3] *Complejo Hospital General de Albacete, Servicio de Radioterapia*

Introduction. Nasopharyngeal carcinoma (NPC) is an uncommon malignant tumor. The disease is often locally advanced. The treatment is high-doses conformal radiotherapy. We report a case of a patient diagnosed with NPC who developed tension pneumocephalus (TP) during the reirradiation. Only 4 cases have been reported in the literature. The osteoradionecrosis, the tumor progression and a rapid treatment response may be mechanisms involved.
Case report. A 46-year-old man was admitted to the hospital with an altered mental status and rhinorrhea. The patient had been diagnosed of NPC 2 years before and treated with chemo-radiotherapy. Local recurrence appeared 1 year later and chemotherapy was scheduled. On MRI, local progression was evident 10 months later. Patient began radiotherapy, but was discontinued at 64 Gy. A craneal radiography showed air in the lateral and III ventricles. A brain CT scan revealed a tension pneumocephalus due to a naso-cranial fistula at the base of skull affected. Two weeks before, these findings were not evident.
Discussion. Pneumocephalus is usually associated with defects in the skull base after trauma, surgery and, less frequently, tumors. TP is produced if there is a valve mechanism which allows air to enter but prevents it from escaping. The osteoradionecrosis, tumor progression and a rapid response to treatment may be mechanisms involved. Our review of literature revealed very few cases of pneumocephalus related to NPC, but only four with TP. ORN is a well-recognised late complication of radiotherapy, but its exact incidence in skull base is unclear. A co-existing contribution by chronic meningeal damage could not be excluded. Furthermore, the fact that PN happened during cytolytic treatment may be by rapid disappearance of a undifferentiated tumor. Even with a careful selection those patients who may be re-irradiated, with choice of radiation doses and techniques (IMRT) and subsequent regular surveillance, late complications still occur.

http://dx.doi.org/10.1016/j.rpor.2013.03.289